SAFE COMMUNITIES

THE 'LET'S GET ALARMED!' INITIATIVE: CLUSTER RANDOMISED CONTROLLED TRIAL OF A SMOKE ALARM GIVE-AWAY PROGRAMME

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INTRODUCTION

Dwelling fires cause hundreds of deaths and thousands of non-fatal casualties in England and Wales each year. There is a steep social class gradient in the risk of fire-related death in England and Wales, due in part to social class differences in the prevalence of risk factors for residential fire occurrence. Differences in smoke alarm ownership by social class might also explain this gradient, since smoke alarm ownership is associated with a substantially reduced risk of fire death. Non-randomised controlled trials in the US have suggested a beneficial effect of smoke alarm give-away programmes on residential fire injuries. We undertook a single-blind, cluster-randomised controlled trial to evaluate the effect of a community-wide smoke alarm give-away programme on fires and fire-related injuries in a multi-ethnic, materially deprived, densely housed population in inner London.

METHOD

The programme was delivered in two (of 33) London boroughs, with above average material deprivation and below average smoke alarm ownership, and targeted low income and rental households and households with elderly persons or young children. Forty wards, averaging 4,000 households each, were pair-matched on Jarman underprivileged area scores and randomised within pairs to intervention or control status. 20,050 free smoke alarms and fire safety brochures were distributed in intervention wards by community groups, volunteers and paid workers between July 1997 and January 1998. One year later, we mailed postcards to recipients, reminding them to change batteries and test alarms.

Principal outcomes included 1) incident injuries resulting from fire in a study area residence and leading to an accident and emergency (A&E) department visit, hospitalisation, or death; and 2) fires attended by the fire brigade that occurred in an occupied dwelling in the study area. To identify fires and fire-related injuries, research assistants, blinded to ward status, conducted surveillance of routinely collected data from 7 local hospitals with A&E departments, ambulance and helicopter emergency services, the fire brigade, the Coroner's Court, and two local newspapers, and also screened computerised NHS records of all hospitalised residents, for one year pre-intervention and two years post-intervention. We collected location and circumstance of fire, patient age and sex, findings, treatment, and disposition. We excluded cases where location could not be determined.

For each outcome, we calculated a relative risk and 95% confidence interval, taking into account the cluster randomisation and retaining the paired nature of the clusters.

RESULTS

Compared to the total study population, recipients included greater proportions of low income and rental households and households including children under five years or adults aged 65 and older.

Outcomes data collection is near completion. At the conference we will report the effect of a community-wide smoke alarm give-away programme on the incidences of residential fires and residential fire-related injuries and deaths.

CONCLUSION

It is possible to implement a large scale smoke alarm give-away programme that successfully targets high-risk households in a densely populated, multi-ethnic, materially deprived community. The programme's effects on the incidences of fires and fire-related injuries, being evaluated via a cluster-randomised controlled trial, will be reported and discussed.

SMOKE ALARM INSTALLATION AND FUNCTION IN INNER LONDON COUNCIL HOUSING: CROSS-SECTIONAL STUDY

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INTRODUCTION

Smoke alarms have been associated with a reduced risk of death when a residential fire occurs. Over the past decade, an increasing prevalence of smoke alarm ownership in England and Wales (currently estimated to be 79%) has coincided with substantially reduced fire injury death rates among children. However, child death rates from fire have declined only in social classes I and II, and not in lower social classes. One possible explanation for this steep social class gradient is reduced ownership, installation or function of smoke alarms among the most disadvantaged groups. The purpose of this study was to determine the prevalence of and predictors for installed and functioning smoke alarms in council (public) housing in a low-income multi-ethnic urban area of inner London.

METHOD

Between October 1998 and March 1999, we visited 315 addresses randomly selected from all council housing within two inner London boroughs with above average levels of material deprivation (Jarman UPA scores of 20 or more). Households were visited at least 3 times each. We surveyed occupants and inspected and tested their smoke alarms. Response rates were 75% for surveys and 72% for inspections.

RESULTS

Smoke alarm ownership, installation and function	Prevalence	% (95% CI)
At least one smoke alarm present	89/228	39 (33 to 46)
At least one alarm installed	71/228	31 (25 to 38)
At least one alarm correctly installed	38/228	17 (12 to 22)
At least one installed, functioning alarm (positive smoke test)	37/225	16 (12 to 22)
At least one correctly installed, functioning alarm	21/225	9 (6 to 14)

The most common reasons for alarm failure were an absent (72%) or disconnected (17%) battery. In a multivariate model, living in a house vs. a flat (OR=3.2; 1.1 to 10.0), having two adults vs. one adult in the home (OR=2.8; 1.2 to 6.5), and recognising stills from a Home Office television smoke alarm promotion campaign (OR=2.4; 1.1 to 5.5) were strongly associated with having an installed, functioning alarm.

CONCLUSIONS

Only a small proportion of council properties in a multi-ethnic, materially deprived urban area had at least one installed, functioning smoke alarm, despite a high risk of residential fires and fire-related injuries and deaths in such areas. A lack of functioning smoke alarms may help explain the steep social class gradient in fire-related deaths among children. Because smoke alarms are associated with a significantly reduced risk of death in residential fires, effective methods to increase the prevalence of installed, functioning alarms in high-risk households must be identified.

HEALTH PROMOTION APPROACHES TO INJURY PREVENTION

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Injuries are an enormous public health problem. Like other public health problems, they must be approached using an effective mix of behavioral and environmental strategies. Changing human behavior, modifying products, and altering environments present three key opportunities for reducing injuries and their consequences. Although there is general consensus that behavioral science has much to offer public health, behavioral and social science applied to injury prevention is under represented in the literature, underdeveloped in theory and application, and severely underfunded.

Behavioral change is an important component of health promotion approaches to pubic health problems, whether applied at the individual, family, or community level. We have learned much about the benefits of taking a health promotion approach to injury prevention in the last decade. Health promotion as distinct from health information or health education approaches, encompasses a combination of strategies simultaneously-- education, organizational policy, environmental modification, legislation, and economic supports for behaviors and conditions of living --that are conducive to preventing injury. The immediate objects of health promotion for injury control include modifying individual and population risk behaviors, reducing exposure to hazardous environments, and removing or altering harmful products from use.

This presentation will describe injuries from a health promotion perspective, outline a 4-step approach to studying injury, indicate approaches that have succeeded and failed, and provide a framework for addressing injury prevention as a part of health and safety promotion. CDC's *Safe USA* initiative that organizes injury prevention by settings for safety concern (safe at home, safe on the move, safe at work, safe at school, safe in the community) will be described as a example of a national effort using this approach.

1-4-B-04

INJURY SURVEILLANCE AND PREVENTION FOR ANCHORAGE'S WORKERS: PROGRESS IN OUR SAFE COMMUNITY APPROACH

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INTRODUCTION: The Arctic and subarctic environments of Alaska provide a very hazardous work setting, exacerbated by great distances, seasonal darkness, high waves and icing hazard. Fatal injury rates have been much higher in Alaska than in other areas of the United States: the highest occupational fatality rate of any state, 35/100,000/yr. (5-fold that of the U.S. overall - 7/100,000/yr.) in the 1980's. This has since been reduced by approximately 48%, due to a concerted interagency effort. While a minority of Alaska's fatal worker injuries (45/510 = 9% for 1990-1996) occurred in Anchorage, a substantial number of workers were hospitalized for moderately or very severe injuries during this time. Anchorage's population of 253,600 comprises 42% of Alaska's 605,300 people (1995 intercensal estimate), and 45% of Alaska's workforce is employed in Anchorage . Thus, when Anchorage was forming its Safe Community Coalition during late 1995 through early 1997, based on successes elsewhere (e.g., in Wang Koi, Thailand, Ft. McMurray, Canada, and Skovde, Sweden) in integrating worker injuries into community-based injury prevention, workers were established as one of the core priority/vulnerable populations for our efforts, along with pedestrians, children, the elderly, and the economically disadvantaged.

PURPOSE: To describe features and risk factors of serious injuries to workers in Anchorage, and apply these findings toward injury prevention and intervention evaluations.

METHOD: Comprehensive, population-based surveillance for non-fatal injuries requiring hospitalization was established in 1991 via the Alaska Trauma Registry. In addition to demographic, type of injury (n-code), etiology (e-code) and activity or occupation at time of injury, a brief free-text injury description is abstracted for each event. Injuries are stratified by severity, and time-phase (Haddon) matrices are used as an analytic and organizing tool.

RESULTS: During 1991-1998 (the 1998 data are provisional), 639 workers, a mean of 80 workers per year, sustained injuries in Anchorage severe enough to require hospitalization. Severe falls were the leading cause (n= 303) of these injuries, and the leading work settings in which these injuries occurred were: construction (73), service industries (70), transportation (28), and the military (24). Machinery also caused many (70) injuries requiring hospitalization, especially in the construction (18) and service (14) industries. Risk factors identified included lack of fall protection and machine guarding, and icy surfaces. There was no clear temporal trend in incidence over this time, although provisional 1998 data (60 injury hospitalizations) show a 25% reduction in mean hospitalized injuries versus 1991-1997.

Our team is now involved in three major projects: 1) an intervention to increase the use of fall protection devices by local contractors and builders. By providing high-quality information about risk factors and available protective equipment, and by encouraging Anchorage-area sites to have a permanent anchor built into all roofs, many falls related to the construction industry could be avoided. This approach may also prevent future injuries around the home, as those individuals that do their own repair projects can utilize the permanent anchors. 2) we will be conducting fall protection and competent person training at next year's Governor's Conference on Safety and Health; and 3) we are working with the local school district to design a "School-to-Work" program that emphasizes safety. This project is targeting children from kindergarten to vocational programs in high school. It is the hope of the group that by emphasizing safety and safe work habits to schoolchildren, the behaviors will be learned and carried over into their adult lives. We are conducting longitudinal surveillance to gather additional incident and risk factor data, and to evaluate the intervention effectiveness of our program.

CONCLUSIONS: Nonfatal injuries have a major effect on Anchorage's workers: the effect of falls in the workplace has been devastating for our construction industry. For many types of workers, work practices and processes are being reevaluated toward preventing these events in the future. Some injury interventions may cut across the groups prioritized by the coalition: e.g., possible effectiveness of studded (crampon) overshoes and energy-absorbing flooring for workers and the elderly, and in day care settings and public housing.

SAFE COMMUNITIES

THE LANDMINES PROBLEM AND PEOPLE RIGHTS TO SAFETY EXAMPLE OF LEBANON

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INTRODUCTION

The international problem of landmines has always threatened the safety of communities everywhere in the world.

The Lebanese estimates proclaim that 150,000.00 landmines remain in the ground nationwide. However, the problem of landmines is not one of number but of impact – the suffering and economic dislocations endured by human beings in their own communities. Landmines lock up tacit plots of agricultural land and prevent reconstruction and development of many areas.

In order to estimate the depth and scope of the landmine problem, a countrywide survey was launched in August 1998 at the Landmines Resource Center as a result of a grant subsidized by the World Rehabilitation Fund in this regard.

The main goal was to gather much-needed data about the number and distribution of landmine victims and the impact of the problem of landmines on the socioeconomic and public health sectors, on the individual and community level as well as the resulting burden on the country at large.

METHOD

Two instruments were developed for the purpose of collecting data in a door to door process all over the country. The first one is administered to the landmine survivor and the second one collected data on the spread and impact of minefields in each and every village of Lebanon.

Interviewers were identified, trained and then selected for the data collection. The survey aimed at screening for all injuries of landmines in order to assess needs for rehabilitation and measure the impact of the problem on the safety of the communities infected by landmines. A database was developed on access software and a geographic information system has been developed for a spatial analysis of results.

RESULTS

At the time of writing the abstract, 630 villages have been visited, 770 landmine survivors interviewed and 453 victims killed by landmines recorded. Demographic characteristics of victims showed that the majority of the victims are young merely in the productive age groups. A large number of injuries took place while victims were engaged in agricultural activities, which were the main source of survival for the majority of the victims. Needs assessment results showed a great misery and reflected a deep need for rehabilitation services and sustainable development programs. Most striking was the desire of communities to live safely, appropriately and with dignity especially that after suffering twenty-year war, landmines are now threatening their tranquility.

CONCLUSION

The Survey of Landmines Victims is still going on. Results so far are mirroring needs for immediate interventions to lessen the socio-economic burden and to help with health related services. It is extremely recommended to intervene in order to prevent more injuries and to give the communities the right to live safely.

TOWARDS A SAFE COMMUNITY: THE SOUTH AFRICAN RURAL EXPERIENCE

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INTRODUCTION

Community-based programs, including community injury control programs have become increasingly popular in the United States. The Safe Communities model used in the United States is based on the following principles: an increasing desire on the part of the US communities to identify and address their individual problems and issues; the fact that motor vehicle injuries are typically found to be the primary injury problem identified at the community level; strategies founded on comprehensive data collection, expanded partnership and strong citizen participation increase the likelihood of the program success. This model has been adopted and modified for s study in Phokeng, a rural community in the North West Province, South Africa.

OBJECTIVE

The Safe Communities model is offered to communities in the United States as a strategy to prevent and mitigate their injury problems. The model possesses four major characteristics: use of multiple data sources and linkage of them if possible, expanded partnership, citizen input and participation, and use of a comprehensive injury control system approach.

METHOD

A pilot project is being implemented in Phokeng, a rural community in South Africa, to study the ability of the community and community-based organizations in implementing the model and in reducing their motor vehicle injury problem. This demonstration community will also attempt to document the cost of motor vehicle injuries.

FINDINGS

Results from the demonstration projects will be available in September 1999. However, experience with other community-based initiative, especially in the US, shows that programs are most likely to succeed if they are well grounded within the community, have a high degree of citizen participation, and are operated through a multi-disciplinary coalition.

CONCLUSION

The Safe Communities implementation and demonstration efforts will yield valuable information for other communities within South Africa which are interested in injury prevention efforts. Although this model focusses on the control of motor vehicle injuries, the Safe Communities model can be used for any community injury control effort.

THE DEVELOPMENT OF AN INSTRUMENT FOR MEASURING SAFETY AWARENESS

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Introduction: Safety Awareness is a competency that is universally desired among various populations but not a term which is well defined in the discipline of Safety Science. In this paper, "Safety Awareness" is defined as "The knowledge required to effectively identify hazards and assess the risk that is associated with each." Safety Awareness involves Risk Perception, which is a well-studied concept in Safety Science, and it is influenced by factors previously identified therein. However, it also involves the additional aspect of hazard recognition. Hazard recognition is a process in which the person considers a specific behavior, either planned or ongoing, and perceives that this behavior poses some element of danger, such as the risk of personal injury or illness. The premise here is that in many common behaviors, the element of danger is frequently ignored because no evaluation of the risk is performed or internalized. There are various reasons for the failure to perform this vital step. However, the hypothesis used in developing this instrument is that as Safety Awareness in an individual increases, the likelihood for this person to utilize the hazard recognition process also increases and risk-taking behaviors will be constrained as a result.

Safety Awareness is presumed to result from learning. This learning can arise from formal education experiences, nurturing experiences in childhood, organized training, societal expectations and practical life experiences to mention just a few. Learning which allows an individual to realize the injury and illness potential associated with certain behaviors will contribute to Safety Awareness. In most countries, society has much at stake with regard to the Safety Awareness of the citizenry. Public resources have been expended to promote education, employers have provided employee safety and health training and the medical community, as well as non-profit agencies, are constantly attempting to improve the Safety Awareness of the public. Conversely the lack of Safety Awareness contributes to the astronomical costs associated with injuries and illnesses. Clearly then a method is needed for measuring Safety Awareness in order to evaluate the effectiveness of the activities directed at reducing public injuries and illnesses.

Method: The purpose of the study is to arrive at a standardized instrument that could be used to test various interest groups who may have received some form of education intended to improve their Safety Awareness. Eighty (80) questions about familiar life behaviors that are commonly encountered in the U.S. were developed and distributed to subject groups. Subjects were asked to judge the degree of danger or safety in each of these behaviors by indicating whether the behavior is "Very Safe", "Somewhat Safe", "Somewhat Dangerous", or "Very Dangerous". After administering the instrument to several groups, the internal consistency of each question was evaluated and the 50 behaviors with the greatest internal consistency were selected for use in the final instrument.

Results: The outcome of the study is a standardized instrument that can be used to measure Safety Awareness of various experimental groups. The cultural uniqueness of the questions limits the use of this specific instrument to the U.S., however the method for instrument design is adaptable to other cultures in the world. This instrument is still being field tested with various groups in order to show the relative levels of Safety Awareness within one group over time or to contrast the differences of Safety Awareness levels between separate and carefully chosen groups.

Conclusions: The recognition of Safety Awareness as a parameter measurable on a relative scale is important because it allows the evaluation of various types of educational, training and professional development efforts. It may also point out the need for additional educational programs, and when coupled with other indicators, it may show what type of educational programs would be most useful.

1-3-B-04

Ensuring Success of Coalition Building and Intersectoral Collaboration

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INTRODUCTION

Coalitions are increasingly popular in many countries, almost a fad in some cases. Health professionals attend numerous meetings and sometimes assume that they understand everything it takes for working groups to succeed. Often, however, groups fail or, perhaps worse, flounder. To avoid this type of experience, which only erodes faith in collaborative efforts, people need to sharpen the skills that are necessary to build and maintain coalitions. This presentation will contribute to the discussion of group dynamics by offering an eight-step process for building effective coalitions. The information is based on a written guide published by the author approximately ten year ago and updated by numerous interactive sessions and trainings. This process can serve as a framework for engaging individuals and organizations invested in addressing community concerns. It offers concrete steps towards building effective partnerships, and provides tips for making collaborations and partnerships work.

COALITIONS HAVE A PIVOTAL ROLE TO PLAY IN PREVENTION

A coalition can be an effective means of achieving a coordinated approach to prevention of unintentional injury and violence. These issues emerge from multiple and complex personal, social, and economic causes, and therefore, necessitates multi-faceted efforts. Rather than creating new projects or programs, effective coalitions can harness existing resources to develop a unique community approach, and hopefully achieve results beyond the scope of one single institution or organization.

As people develop more experience in coalition building there are more difficult questions that emerge. For example, "What do we do in a community that already has many coalitions?" "What is the appropriate 'life-span' of a coalition?" "How do we avoid, or address turf struggles?" "Is this coalition really having an impact?" "How can government sectors be engaged in addition to NGO's?" "How can we improve collaboration between all government sectors?" In addition, the ability to strategically select members, objectives, and evaluate coalitions is critical to making collaborations successful.

EIGHT STEPS TO BUILDING AN EFFECTIVE COALITION
Step 1.Analyze the program's objectives and determine whether to form a coalition.
Step 2.Recruit the right people.
Step 3.Devise a set of preliminary objectives and activities.
Step 4.Convene the coalition.
Step 5.Anticipate the necessary resources.
Step 6.Define elements of a successful coalition structure.
Step 7.Maintain coalition vitality.
Step 8.Make improvements through evaluation.

CONCLUSION

Coalitions need to be understood as a tool, not an end in themselves. A coalition is not appropriate in every situation. Therefore it is important to be precise about goals and objectives in order to ensure that a coalition is effective. Generally, coalitions should not last forever. However, the impact of a carefully-crafted coalition remains beyond its lifespan. Effective coalitions play an important role in building community cohesiveness and strengthening unintentional injury and violence prevention initiatives.

At the conclusion of this presentation, participants will be able to systematically apply the tools of coalition building in the work they do. In addition, the participant will be able to identify and address the most common barriers to coalition building that professionals experience.

SAFE COMMUNITIES

TITLE: RURAL INDUSTRIALIZATION IN WEST BENGAL AND ITS IMPACT ON RURAL ENVIRONMENT

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In recent years, there is a proliferation of industries in rural areas. Brick-kiln, rice milling, stone crushing and even thermal power plant have come up in rural areas. These industries spewing smoke, throwing fly ash and emitting fumes, causing serious health hazards to the public. In early days, there were industries in rural areas, which were mostly household cottage type, and which did not create any health hazards whatsoever.

Industrialization in rural areas has mixed benefits. It provides employment to the rural people, improves physical amenities (roads, electricity, water supply etc.) and brings in extra earnings to the local councils. Simultaneously, it brings many problems. Some are purely environmental, concerned with the health of the people while others are socio-cultural. An examination of the above issues in spatial context will pin point the gravity of the situation.

The present paper seeks to examine the various dimensions of environmental changes in rural areas of West Bengal, associated with the Rural Industrialization.

2-3-K-02

The Spectrum of Prevention: Developing A Comprehensive Approach to Injury Prevention

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INTRODUCTION

This presentation will describe the *Spectrum of Prevention*, a methodology for developing and encouraging practitioners to implement comprehensive initiatives in unintentional injury and violence prevention. The tool (Fig. 1) is comprised of six levels of increasing scope moving from a focus on the individual and family to community norms, institutional practices, and finally laws. The *Spectrum* seeks to aid practitioners to reduce injuries and their severity by identifying the need for a systems approach and promoting an overall strategy which can result in 'a whole that is greater than the sum of its parts'.

NEED FOR A STRATEGIC APPROACH TO INJURY PREVENTION

As Rivera and Mueller point out, "until recently there has been little interest in developing conceptual models for injury research (Rivera, 1987)." The lack of systematic approaches has resulted in little continuity between studies or in progress toward a better understanding of the 'best' solutions to the injury problem. The present haphazard approach must be replaced by more rational and scientific analysis". *The Spectrum of Prevention* was developed in 1983 by Larry Cohen, based upon the clinical work of Dr. Marshall Swift. It emerged from the conviction that preventive practice was too frequently trivialized and misunderstood as simply an educational practice, whereas complex problems require comprehensive solutions. The tool was refined in the practice of a local health department –the Prevention Program in Contra Costa County, California, United States -- where it was implemented in injury prevention for children and adolescents.

Spectrum of Prevention
1. Strengthening Individual Knowledge and Skills
2. Promoting Community Education
3. Educating Providers
4. Fostering Coalitions and Networks
5. Changing Organizational Practices
6. Influencing Policy and Legislation

Figure 1

The *Spectrum* has been applied to health problems in dozens of communities worldwide. In particular, it is being used increasingly in injury prevention practice. For example, the National Highway Traffic Safety Administration and WHO have both made use of this tool during professional trainings in comprehensive approaches and strategy development. State-funded projects in California in injury prevention, nutrition and physical activity have been required to use the *Spectrum* in program design and evaluation.

CONCLUSION

While there has been a great deal of positive movement in injury prevention, results have not been maximized through sustained, strategic efforts. Often practitioners work in areas that are most familiar to them, such as community education and individual skill building. The *Spectrum of Prevention* is a tool that enables practitioners to move beyond a primarily educational approach to achieve broad impact through multifaceted activities. It can aid practitioners and policy makers in thinking through, evolving and strategically developing prevention programming efforts.

As communities seek to address increasingly complex social and health issues they will face the challenge of devising new services and programs *in response* to injuries until they are committed to promoting *prevention*. While every injury or death cannot be prevented, when systematic methodology, like the *Spectrum of Prevention,* is applied and an overall strategy developed, prevention efforts have an excellent chance for success. A good strategy solves multiple problems, saves lives and money, reduces suffering and enhances the prospects for community well being.

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RESILIENCE: A SOUTH AFRICAN INVESTIGATION INTO "BOUNCING BACK" AFTER INJURY.

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INTRODUCTION

An exploratory study of protective factors against intentional and unintentional injury was conducted between January and April 1998. This study set out to identify key social and environmental factors protecting against injury and violence in three rural neighbourhoods located in the Western Cape region of South Africa. These neighbourhoods, namely Nomzamo, Rusthof and Erijaville, have high levels of poverty, unemployment, intentional injury (caused by violence) and unintentional injury (caused especially by traffic incidents, burns, falls, and home injuries), features common to the under-resourced rural settings of South Africa. While some attention has been paid to the occurrence of injury in low-income countries, less has been said about the resilience factors that may buffer and minimise exposure to injury. In this study we focused upon various protective factors thought to shield individuals and communities from injury in these often hostile environments. In particular, we examined the presence of factors such as access to community structures and leadership, access to social support networks, experience of neighbourhood cohesion, household security, knowledge of injury prevention, ownership of a small business and community hope, amongst injured and uninjured samples drawn from the three rural neighbourhoods.

METHOD

In interviews conducted in 449, or 20% of Nomzamo, Rusthof and Erijaville households, we explored the impact of factors regarded as protective by both community members and by the resilience literature. The structure of the questionnaire had been informed by focus group discussions with community representatives, and a technical support group, and had been constructed to focus on the select range of resilience factors mentioned above. We are currently conducting a within group analysis between the injured and non-injured groups, utilising the Chi-square and t-test, via the Stata Data Analysis package.

RESULTS and CONCLUSIONS

It is anticipated that access to community structures and leadership, access to social support networks, experience of neighbourhood cohesion, household security, knowledge of injury prevention, ownership of a small business and community hope, will have some impact on safety and injury prevention. In our presentation we will report on the findings of this study and discuss its implication for further research in the field.

[1] The first author will be the primary presenter of the paper

2-3-K-04

SURVEILLANCE & RESEARCH BASED NATIONAL AND COMMUNITY WATER SAFETY PROGRAMS AND A 45 PERCENT DECREASE IN DROWNINGS OF 0 TO 4 YEAR OLD CHILDREN IN CANADA 1991-1997: IS THERE A LINK?

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INTRODUCTION A national surveillance system for water-related injury fatalities was developed in Canada during the early 1990's. The lead was taken by national water safety organizations. Determinants of toddler (1-4 year olds) and infant (<1 year olds) drownings have been monitored since 1991. Incidence trends were assessed for 1991-1997. A highly significant decrease was observed. Various explanations were explored, including introduction of a new national water safety program in most communities across Canada during late1994 and early 1995.
METHOD The Canadian Surveillance System for Water-Related Fatalities is based upon systematic review of coroners' and police reports for all drownings and other related injuries. Questionnaires are completed by volunteers in all provinces and verified and corrected centrally by trained professionals. The system monitors incidence and determinants, which are published in annual visual surveillance reports and special research reports. Collaborators include The Canadian Red Cross Society, Lifesaving Society, a team of public health/university researchers and the National Association of Coroners. The Canadian Coast Guard also participates. National census data for 1991 and 1996 and intercensal projections were used for rates. Chi-square analysis was used to test significant linear trend and differences between the early and later period. The numbers of incidents were verified against vital statistics.
RESULTS Data were compared for 1991-1993, 1994 (mid-point), and 1995-1997. (Table 1).

Table 1. Numbers and rates of drownings of toddlers & infants by year, Canada 1991-1997

	Toddlers			Infants		
Year	Number of drownings	Rate/100,000 in age group	Population of toddlers	Number of drownings	Rate/100,000 in age group	Population of infants
1991	48	3.0	1,532,300	5	1.2	403,700
1992	50	3.2	1,566,900	6	1.5	402,200
1993	50	3.1	1,612,900	6	1.5	401,000
1994	***46***	***2.8***	***1,617,500***	***5***	***1.3***	***387,900***
1995	25	1.6	1,605,939	0	0.0	381,559
1996	36	2.3	1,551,125	1	0.3	366,705
1997	29	1.8	1,568,540	2	0.5	363,778

The probability that observed differences between earlier and later periods arose by chance alone is less than 1 in 1000. (Chi squares: ages 0-4 years=80, $p<0.001$; ages 1-4 years=12, $p<0.001$; age <1 year=10.6, $p<0.005$). Percentage decrease in drownings between the two periods 1991-1993 and 1995-1997 among 0 to 4 year olds was 45%, for toddlers 40%, and for infants 82%.
CONCLUSIONS Between 1920 and 1950, toddler drowning rates in Canada were relatively stable at about 20 per 100,000 population per year. Between 1951 and 1990, the rate gradually declined to about 3 per 100,000. The rate was stable during 1991-1994, but declined abruptly in 1995. This decline was not observed for other ages. The sudden decline in drownings of toddlers and infants in Canada was observed almost immediately after the introduction across the country of new community water safety and training programs for children and their parents. These programs were based upon research and surveillance data, as well as modern principles of injury control and public health. This could be a useful model for surveillance and prevention of other injuries.

SAFE COMMUNITIES

HIP-PROTECTORS – FROM RESEARCH INTO PRACTICE, A PILOT AND FEASIBILITY STUDY.

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Introduction

Prevention of hip fractures is of utmost importance to the individual elderly as well as the society. Litterature reviews in the field suggest application of a broad range of interventions simultaneously in contrast to single specific efforts. When facing the decision stage of adding individual components to a more general "package" the field personnel faces the problem of how to choose those components. A traditional way of doing this is to combine aspects of experience with topics documented in specific research projects. In the adaptation of a method from research one is most often confronted with new types of problems which did not received major attention in the research process. These are problems like applicability in practice with limited resources and personnel, suitability for general use or for selected subgroups only and finally the need to develop instruction manuals and procedures which are relevant for a broader range of working places and institutions than the usually "simplified" research situation.
An example of this has been the introduction of hip-protectors in municipal and hospital services. Use of hip protectors has been shown to protect a considerable proportion of hip-fractures among elderly in institutions in Denmark[1]. Preliminary results from a similar approach in Sweden has shown the same effects[2]. Simulation studies of falls in young persons implies that the force reducing effects of the hip-protector is sufficient to lower the actual impact at hip-bone level to a level, which would be tolerated in an osteoporotic elderly, but also that the type of padding material is important [3]. Furthermore the studies have shown that even in the research setting compliance is relatively low 35-40 %. With this knowledge in mind we have therefore planned the pilot testing of using hip-protectors in public elderly service.

Aim:

1. To develop procedures and instruction materials for introduction of hip-protectors in hospital wards
2. To develop forms and follow-up procedures which allow assessment of compliance of wearing hip protectors.
3. To clarify whether some elderly will need more help if wearing hip-protectors

Time schedule:

Hip protectors are given out from jan. 1st-May 1st 1999. Follow Up at predetermined times 1,2,3,4,5 and 6 months following initiation. Results will be presented at the conference.

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[1] Lauritzen JB, Petersen MM LB. Lancet 1993; 341: 11-13.
[2] Ekman M, et al. External hip protectors to prevent osteoporotic hip fractures. Lancet 1997; 350: 563-4.
[3] Parkkari J. Force attenuation properties of various trochanteric padding materials under typical falling conditions of the elderly. J Bone Miner Res 1994;9:13391-1396.

3-3-K-02

COMMUNITY RESPONSES TO SELECT VIOLENCE RELATED BEHAVIOURS: RETREATING OR BOUNCING BACK

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INTRODUCTION

Increasing public health priority is being accorded to injury and violence prevention worldwide. There is growing concern that the health consequences of injury and violence are a significant cause of morbidity and mortality among vulnerable and marginalised groups in particular, and that they continue to represent a masked obstacle to the psychosocial and socioeconomic development of communities. Accordingly, there is an increasing interest in exploring the characteristics of resilience, and the processes through which resiliency factors buffer the effects of risk factors and vulnerability and promote health and safety among at-risk populations. Against this backdrop, exploratory studies of community responses to selected violence related behaviours were conducted between 1997 and 1998 in three rural neighbourhoods (Nomzamo, Rusthof and Erijaville) in the Western Cape region of South Africa and in two urban neighbourhoods (Eldorado Park, Extension 4 and Thembelihle) south west of Johannesburg. The studies were intended to be responsive to the need to better understand the processes through which community resiliency may operate to mitigate the health consequences of injury and violence. The objective of this paper is to examine each community's health protection and promotion responses to three violence related behaviours in relation to two dimensions of resiliency, that is, neighbourhood cohesion and social support networks. The paper will report on the quantitative and qualitative responses emerging from the study and analyse the degree of correlation evident across the five neighbourhoods.

METHOD

Interviews were conducted in 449 (20%) households in Nomzamo, Rusthof and Erijaville, in 136 households in Eldorado Park, Extension 4 and in 618 households in Thembelihle. Focus group discussions with community representatives, as well as a scientific advisory committee informed the structure and content of the questionnaire. The questionnaire was constructed with the aim of illuminating the incidence of violence, the morbidity from violence and the range of protective factors present in the communities concerned. Data analysis is being currently conducted via the Stata Data Analysis programme and through thematic analytic procedures.

RESULTS AND CONCLUSIONS

It is anticipated that despite such adverse conditions of poverty, displacement, discrimination and exposure to threats of or actual intentional and unintentional injury, greater social cohesion and enhanced social support networks will be found to favour more proactive, socially responsive and intervening responses to situations of perceived and actual violence. The precise findings of the study, as well as their applied and theoretical implications, will be detailed in the oral presentation.

REACHING THE PUBLIC WITH SAFETY MESSAGES: A CHALLENGE TO INJURY PREVENTION

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INTRODUCTION

A major challenge for the injury prevention and control (IP/C) field is establishing effective information channels to the general public. This can be particularly true for public health agencies, especially those not operating at the local level. Fundamentally, primary prevention requires recognition of risks, analysis to identify response options, and initiation of appropriate changes by individuals, families, and communities. Underlying any change toward IP/C, is awareness of risks and of appropriate methods for controlling or reducing them. In applying these premises to the control of injury occurrence, many risk situations can be managed if the primary audience (a) has sufficient, accurate safety information, (b) believes the information and the credibility of the source(s), (c) accepts the concepts of both the risk and potential to control it, (d) has the resources to do it, and (e) chooses to take action.

Tools are needed, too. Risk information alone is often insufficient. Facts and statistics are important, but so are specifics about potential solutions and the resources they require (purchase of a device, means to install/maintain it, and its impact on already established life styles or changes it requires in behavior, e.g., buckling the seatbelt, or not drinking and driving). In order for prevention steps to be taken, the communication and change processes require information stimulus and continued reinforcement.

METHOD

This presentation will examine three approaches for transmitting IP/C information to audiences outside a health setting. A specific example including an evaluation component is provided for each approach. These offer a basis for discussion and comparison among IP/C practitioners from other locales.

RESULTS

The three approaches are (1) PUBLIC EDUCATION, exemplified by a regular health column in a monthly newspaper for government employees; (2) ENLISTING INTERMEDIARIES NOT IN A HEALTH FIELD, represented by an IP/C class for social service workers; and (3) TRANSMITTING TARGETED IP/C INFORMATION IN NON-HEALTH SETTINGS, illustrated by safety exhibits at a home building and design show. Next, a word about each project:

(1) Public Education—Since October 1998, a regular article offering health and safety tips has been presented in a 20-40 page newspaper, Round the Roundhouse, published monthly for all state employees of New Mexico. The column is named "Improving Our Health Odds" to convey the notion that each of us can control some risk factors, and some ways to do it. Evaluation will consist of a short survey with competition for prizes to better identify the readership and its interests. As this abstract is being written, the published articles are being prepared for access via the Internet.

(2) Enlisting Non-health Intermediaries—Each year since 1996 the health educator with the La Crosse, Wisconsin, county public health agency has organized a half-day course for social workers who provide ongoing home visits to families with socialization and domestic safety issues for their children. The course addresses both unintentional injuries and selected environmental health topics, i.e., lead poisoning and rodent/vermin control. The participants, who also receive safety items such as electrical outlet covers for distribution, have found that safety information provides a non-threatening introduction to their clients and helps in gaining their trust before they broach emotionally threatening social and behavioral issues. Evaluation is by survey at the end of each class.

(3) Transmitting IP/C in Non-Health Settings—Since 1997, several state and local government agencies collaborated in a large exhibit on building safety into homes at the time of new construction or renovation; it was presented at Madison, Wisconsin's annual "Home Show". For the first time public and environmental health agencies jointly offered information and demonstrations on such topics as electrical, fire, floor covering, stair design, lead poisoning, radon, and ground water safety. Evaluation was done via a drawing for several packets of safety products for which booth visitors signed up. Informational brochures developed by this project are now also available on the Internet.

CONCLUSIONS

A key purpose of these efforts is to integrate IP/C into non-health settings to directly and meaningfully reach the ultimate audience. Such approaches should garner more recognition for IP/C expertise in the larger community and build support for its messages, encourage implementation of its lessons, and develop constituencies who will advocate for the field.

3-3-K-04

ISRAEL - GETTING STARTED IN CHILDHOOD INJURY PREVENTION. A MULTIFACETED APPROACH

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INTRODUCTION

One third of Israel's 6 million inhabitants are children. As in other developed countries, injuries are the leading cause of mortality and morbidity in the pediatric population. Each year, 45% of children seek medical attention for injuries, and one out of 12 children requires an Emergency Room visit, of whom approximately 10% are hospitalized, and approximately 200 children lose their lives. Despite these alarming data, up until 1994 the issue of pediatric injury prevention in Israel was virtually ignored on all levels; governmental (Ministries of Health, Transportation, Education etc.) nor academic, and community (profit and non-profit organizations). The past five years has witnessed a dramatic change in the approach to childhood injury. A multifaceted, dynamic, constantly expanding program has been developed.

THE PREVENTION OF CHILDHOOD INJURY - A MULTIFACETED APPROACH

1. Community Intervention: The interventions being implemented at the community level involve the integration of medical, educational, public and environmental resources. Examples for the intervention implemented include the modified version implementation of The Injury Prevention program originally developed by the American Academy of Pediatrics, adapted to the very developed well baby clinics system in Israel. A modular program to promote safer childcare services is based on recommendations of the American Academy of Pediatrics and the American Academy of Public Health and covers four domains: intensive training for caregivers, environmental changes, parental education, and work with the toddlers themselves, all in an ongoing basis; The Safe Communities program, based on the WHO model, is being implemented in a Jewish city and an Arab town; a "getting stared kit" has already been developed.

In addition, community coalitions are being formed throughout the country, and safety fairs and educational projects are being carried out in the schools, as is secondary prevention by personal instruction to families of hospitalized injured children.

2.Research and Evaluation: Until 1994 almost no information existed on the epidemiology of injuries in Israel. There were no systematic evaluations of prevention programs and only very few behavioral studies. Since then, Israel has joined the international protocol, "Health Behavior of School Children", which provides data on self-reported injuries in the community. This was followed by the countries first comprehensive epidemiological survey about pediatric injuries in emergency departments and the establishment of a National Trauma Registry. The first National Summary on Injury Prevention is currently being written. An interdisciplinary conference on injury prevention was held in 1998, with the participation of 700 health professionals, and a second one is planned for April 2000. These combined efforts are yielding a clearer picture of the situation of childhood injuries in Israel, thereby enabling the ongoing evaluation and update of existing programs and the formation of new ones as necessary.

3. Advocacy, Media and Communication: The final report of the National Trauma Prevention Committee was submitted in 1998. The National Committee for Childhood Injury Prevention is also working in an ongoing basis with the Ministry of Health, Ministry of Justice to enact health laws, and municipalities and various organizations to promote the subject nationwide. Mass media channels are being utilized, and informational materials are being targeted to specific groups in the community.

4. Professional Education and Training: Courses are being given for caretakers, physicians, nurses, teachers and the general population, emphasizing the role of each of these groups in injury prevention.

RECOMMENDATIONS

Efforts in these different channels should continue. In addition, we need to create pediatric trauma centers, improve medical emergency services for children and establish a research center dedicated primarily to injury prevention. Government and local funds should be allocated to the subject, not only to the prevention of motor vehicle crashes, like today, but to all other areas. Cooperation between government institutions, the health system, private institutions, non-profit organizations and the general public in Israel is essential to the recognition of childhood injuries as a major problem for the well being of its population and the implementation of the necessary steps to prevent them. Although we still have a long way to go in reducing the morbidity and mortality caused by childhood injuries; we are finally on the right track to achieving this goal.

SAFE COMMUNITIES: RESULTS FROM A DEMONSTRATION AND EVALUATION OF A NEW MODEL INJURY CONTROL PROGRAM IN THE UNITED STATES

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INTRODUCTION

Community-based programs; including community injury control programs have become increasingly popular in the United States. This is the result of numerous societal changes including a desire at the local level to take control over issues which affect communities; changes in the way the Federal and state governments regulate and provide resources for community interests; existence of a diverse array of serious societal problems including crime, education, single-parent families, teenage pregnancy and smoking; and an overall desire to return to a safer, calmer society more prevalent in past eras. These societal changes have afforded an opportunity to introduce an innovative approach to community injury problems. The Safe Communities model, as used in the United States has four elements: comprehensive data collection and analysis to fully describe the community injury problem, strong citizen participation in prioritizing the problems and selecting interventions, partnerships with a broader array of community sectors than had typically been involved, and use of a comprehensive injury control approach to address injury problems.

Community traffic safety programs have existed for thirty years, however, only anecdotal evidence exists regarding the efficacy of a community-based approach in reducing community motor vehicle injury problems. A study conducted in the early 1990's showed promising indications that community-based programs can effect change, but offered no real evidence. The Safe Communities demonstration and evaluation program is designed to gather this evidence as well as qualitative information such best practices and lessons learned to facilitate replication of the model in other locations.

METHOD

A demonstration and evaluation program is being implemented in seven communities to study the ability of different types of communities to implement the model and achieve measurable changes in their motor vehicle injury problems. In addition to the seven communities, the model is being utilized in varying degrees in over six hundred other locations. The communities are documenting their efforts for the purpose of providing lessons learned and best practices information to other communities interested in implementing the model. They are also evaluating the impact of the model in reducing their motor vehicle injury problem including fatalities, injuries, and costs.

FINDINGS

Preliminary data show measurable improvements in child safety seat use, seat belt use, bicycle helmet use and injury rates. In addition, both citizens and partners in the Safe Communities programs have noted the benefits this model has brought to the community, including the ability to address multiple injury problems in a coordinated fashion, the forging of new partnerships that bring additional expertise and resources to the effort, more efficient utilization of community resources, lessening of duplication of effort, and a renewed sense of citizen control over issues which affect them.

CONCLUSIONS

The Safe Communities model is effecting change in communities across the United States. The experiences in the demonstration sites are providing valuable lessons for other communities interested in implementing the model. The programs are also confirming preliminary findings and anecdotal evidence that community-based injury control programs will provide greater reductions in motor vehicle injury problems than programs approached from outside of the community.